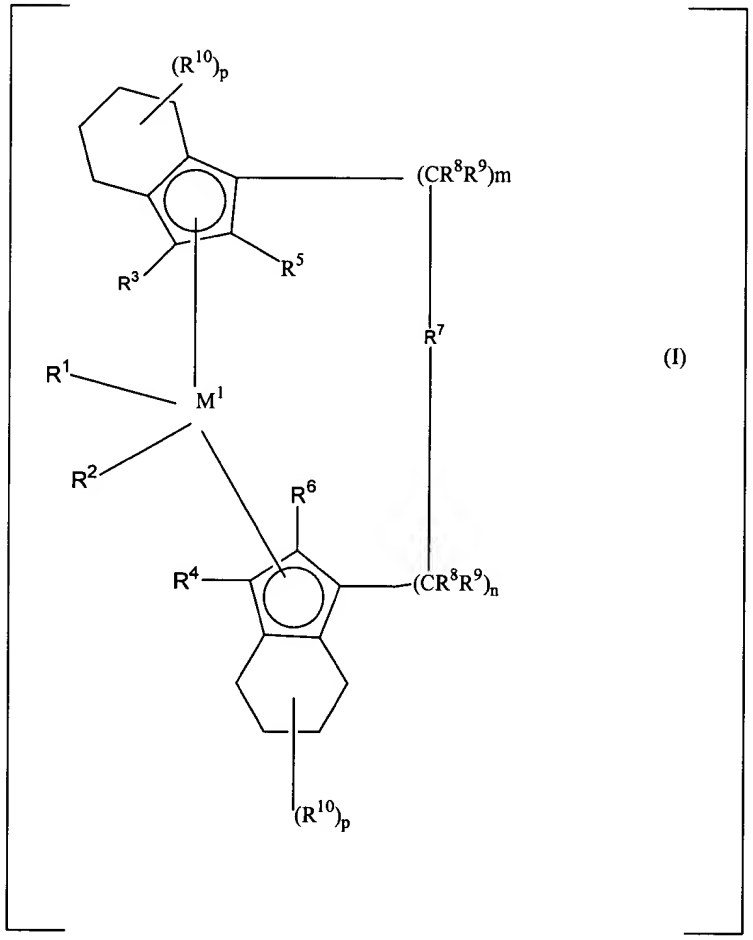
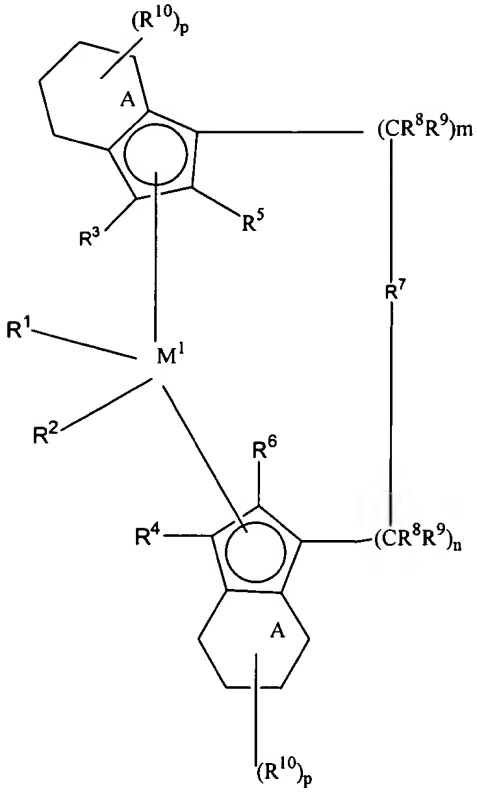
AMENDMENTS TO THE CLAIMS

1. A compound of the formula I for preparing essentially isotactic olefin polymers



(I)



(I)

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in which

M^1 is a metal from group IVb, Vb or VIb of the Periodic Table

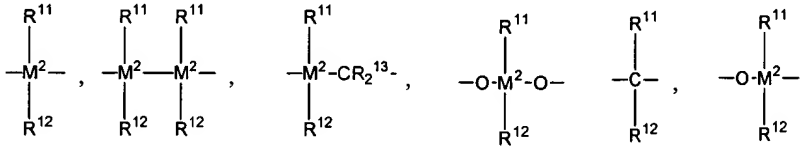
R^1 and R^2 are identical or different and are a hydrogen atom, a C_1-C_{10}-alkyl group, a C_1-C_{10}-alkoxy group, a C_6-C_{10}-aryl group, a C_6-C_{10}-aryloxy group, a C_2-C_{10}-alkenyl group, a C_7-C_{40}-arylalkyl group, a C_7-C_{40}-alkylaryl group, a C_8-C_{40}-arylalkenyl group or a halogen atom,

R^3 is a hydrogen atom, a halogen atom, a C_2-C_{10}-alkyl group, a C_1-C_{10}-alkyl group which is halogenated, a C_6-C_{10}-aryl group, an $-NR_2^{15}$, $-SR^{15}$, $-OSiR_3^{15}$, $-SiR_3^{15}$ or $-PR_2^{15}$ radical in which R^{15} is a halogen atom, a C_1-C_{10}-alkyl group or a C_6-C_{10}-aryl group,

[R^3 and] R^4 is a hydrogen atom, a halogen atom, [a halogen atom,] a C_1-C_{10}-alkyl group, which is optionally halogenated, a C_6-C_{10}-aryl group, an $-NR_2^{15}$, $-SR^{15}$, $-OSiR_3^{15}$, $-SiR_3^{15}$ or $-PR_2^{15}$ radical in which R^{15} is a halogen atom, a C_1-C_{10}-alkyl group or a C_6-C_{10}-aryl group,

R^5 and R^6 are identical or different and are as defined for [R^3 and] R^4, with the proviso that R^5 and R^6 are not hydrogen,

R^7 is



$=BR^{11}$, $=AlR^{11}$, -Ge-, -Sn-, -O-, -S-, =SO, $=SO_2$, $=NR^{11}$, =CO, $=PR^{11}$ or $=P(O)R^{11}$,

where

R^{11}, R^{12} and R^{13} are identical or different and are a hydrogen atom, a halogen atom, a C_1-C_{10}-alkyl group, a C_1-C_{10}-fluoroalkyl group, a C_6-C_{10}-aryl group, a C_6-C_{10}-fluoroaryl group, a C_1-C_{10}-alkoxy group, a C_2-C_{10}-alkenyl group, a C_7-C_{40}-arylalkyl group, a C_8-C_{40}-arylalkenyl group or a C_7-C_{40}-alkylaryl group, or a pair of substituents R^{11} and R^{12} or R^{11} and R^{13} in each case with the atoms connecting them, form a ring,

M^2 is silicon, germanium or tin,

R^8 and R^9 are identical or different and are as defined for R^{11}

m and n are identical or different and are zero, 1 or 2, m plus n being zero, 1 or 2,

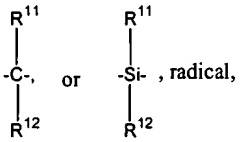
the radicals R^{10} are identical or different and are as defined for R^{11}, R^{12} and R^{13},

rings A are saturated or aromatic,

p is 8, when rings A are saturated, and

p is 4, when rings A are aromatic.

2. A compound of the formula I as claimed in claim 1, wherein, in the formula I, M^1 is Zr or Hf, R^1 and R^2 are identical or different and are methyl or chlorine, R^3 or R^4 are hydrogen, R^5 and R^6 are identical or different and are methyl, ethyl or trifluoromethyl, R^7 is a



n plus m is zero or 1, and R^{10} is hydrogen.

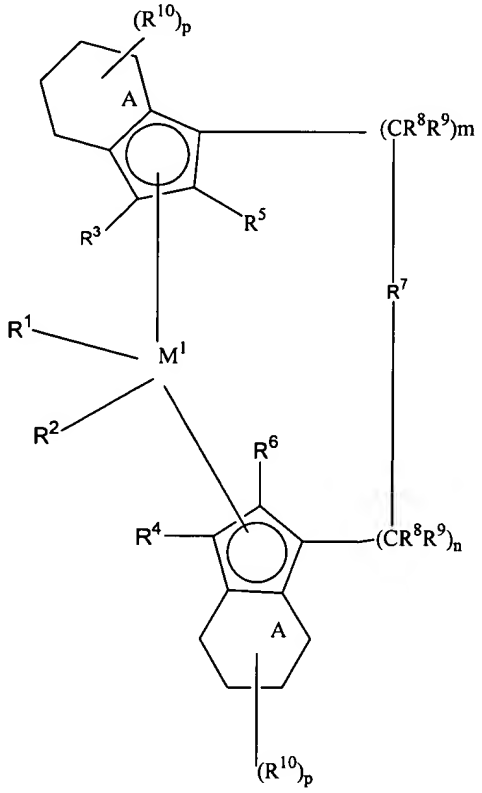
3. A compound of the formula I as claimed in claim 1 wherein the compound is rac-dimethylsilyl(2-methyl-4,5,6,7-tetrahydro-1-indenyl)$_2$zirconium dichloride, racethylene(2-methyl-4,5,6,7-tetrahydro-1-indenyl)$_2$zirconium dichloride, rac-dimethylsilyl (2-methly-4,5,6,7-tetrahydro-1-indenyl)$_2$dimethylzirconium or racethylene(2-methyl-4,5,6,7-tetrahydro-1-indenyl)$_2$dimethylzirconium.

4. A compound as claimed in claim 1, wherein M^1 is zirconium, hafnium or titanium.

5. A compound as claimed in claim 1, wherein R^1 and R^2 are identical or different and are a hydrogen atom, a C_1-C_3-alkyl group, a C_1-C_3-alkoxy group, a C_6-C_8-aryl group, a C_6-C_6-arloxy group, a C_2-C_4-alkenyl group, a C_7-C_{10}-arylalkyl group, a C_7-C_{12}-alkylaryl group, a C_8-C_{12}-arylalkenyl group or chlorine.

6. A compound as claimed in claim 1, wherein R^3 is a C_4-alkyl group, C_1-C_4-alkyl group which is halogenated, a C_6-C_8-aryl group, an $-NR_2^{15}$, $-SR^{15}$, $-OSiR_3^{15}$, $-SiR_3^{15}$ or $-PR_2^{15}$ radical and R^4 is [are identical and different and are] a hydrogen atom, a fluorine, chlorine or bromine atom, a C_1-C_4-alkyl group, which may be halogenated, a C_6-C_8-aryl group, an $-NR_2^{15}$, $-SR^{15}$, $-OSiR_3^{15}$, $-SiR_3^{15}$ or $-PR_2^{15}$ radical in which R^{15} is a chlorine atom , or a C_1-C_3-alkyl group or a C_6-C_8-aryl group

7. A compound [as claimed in claim 1,] of the formula (I) for preparing essentially isotactic olefin polymers



(I)

in which

M^1 is a metal from group IVb, Vb or VIb of the Periodic Table

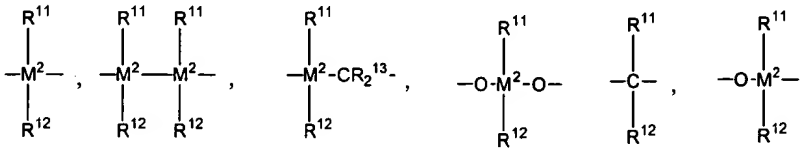
R^1 and R^2 are identical or different and are a hydrogen atom, a C_1-C_{10}-alkyl group, a C_1-C_{10}-alkoxy group, a C_6-C_{10}-aryl group, a C_6-C_{10}-aryloxy group, a C_2-

C_{10}-alkenyl group, a C_7-C_{40}-arylalkyl group, a C_7-C_{40}-alkylaryl group, a C_8-C_{40}-arylalkenyl group or a halogen atom,

R^3 and R^4 are hydrogen,

R^5 and R^6 are identical or different and are a halogen atom, a C_1-C_{10}-alkyl group, which is optionally halogenated, a C_6-C_{10}-aryl group, an $-NR_2^{15}$, $-SR^{15}$, $-OSiR_3^{15}$, $-SiR_3^{15}$ or $-PR_2^{15}$ radical in which R^{15} is a halogen atom, a C_1-C_{10}-alkyl group or a C_6-C_{10}-aryl group

R^7 is



$=BR^{11}$, $=AlR^{11}$, -Ge-, -Sn-, -O-, -S-, =SO, $=SO_2$, $=NR^{11}$, =CO, $=PR^{11}$ or $=P(O)R^{11}$,

where

R^{11}, R^{12} and R^{13} are identical or different and are a hydrogen atom, a halogen atom, a C_1-C_{10}-alkyl group, a C_1-C_{10}-fluoroalkyl group, a C_6-C_{10}-aryl group, a C_6-C_{10}-fluoroaryl group, a C_1-C_{10}-alkoxy group, a C_2-C_{10}-alkenyl group, a C_7-C_{40}-arylalkyl group, a C_8-C_{40}-arylalkenyl group or a C_7-C_{40}-alkylaryl group, or a pair of substituents R^{11} and R^{12}-- or R^{11} and R^{13} in each case with the atoms connecting them, form a ring,

M^2 is silicon, germanium or tin,

R^8 and R^9 are identical or different and are as defined for R^{11}

m and n are identical or different and are zero, 1 or 2, m plus n being zero, 1 or 2,

the radicals R^{10} are identical or different and are as defined

for R^{11}, R^{12} and R^{13},

rings A are saturated or aromatic,

p is 8, when rings A are saturated, and

p is 4, when rings A are aromatic.

8. A compound as claimed in claim 1, wherein R^5 and R^6 are identical.

9. A compound as claimed in claim 1, wherein R_5 and R_6 are (C_1-C_4)-alkyl, which may be halogenated with methyl.

10. A compound as claimed in claim 1, wherein R^{11}, R^{12} and R^{13} are identical or different and are a hydrogen atom, a halogen atom, a C_1-C_4-alkyl group, a CF_3 group, a C_6-C_8-aryl group, a pentafluorophenyl group, a C_1-C_4-alkoxy group, a C_2-C_4-alkenyl group, a C_7-C_{10}-arylalkyl group, a C_8-C_{12}-arylalkenyl group of a C_7-C_{12}-alkylaryl group, or R^{11} and R^{12} or R^{11} and R^{13}, in each case together with the atoms connecting them, form a ring.

11. A compound as claimed in claim 1, wherein M^2 is silicon or germanium.

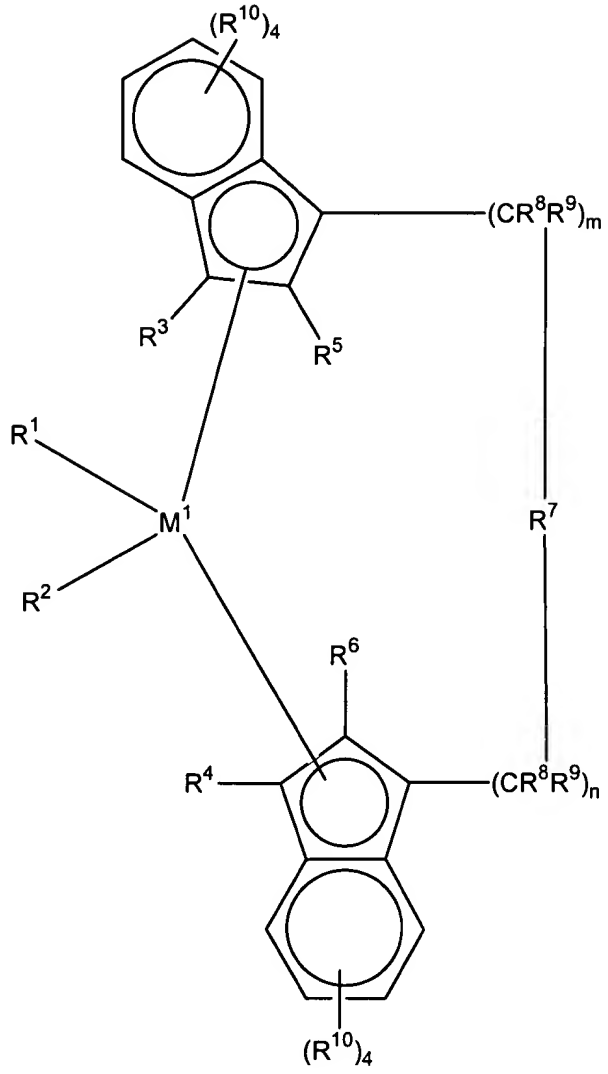
12. A compound as claimed in claim 1, wherein R^7 is $=CR^{11}R^{12}$, $=SiR^{11}R^{12}$, $=GeR^{11}R^{12}$, -O-, -S-, =SO, $-PR^{11}$ or $=P(O)R^{11}$.

13. A compound as claimed in claim 1, wherein m and n are identical or different and are zero or 1.

14. A compound as claimed in claim 1, wherein m plus n is zero or 1.

15. A compound as claimed in claim 1, wherein R^{10} is hydrogen or C_1-C_4-alkyl groups.

[16. A compound of the formula I



(I)

in which

M^1 is a metal from group IVb, Vb or VIb of the Periodic Table,

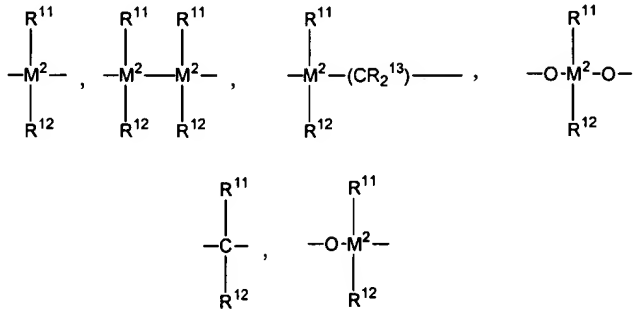
R^1 and R^2 are identical or different and are a hydrogen atom, a C_1-C_{10}-alkyl group, a C_1-C_{10}-alkoxy group, a C_6-C_{10}-aryl group, a C_6-C_{10}-aryloxy group, a C_2-C_{10}-alkenyl group, a C_7-C_{40}-arylalkyl group, a C_7-C_{40}-alkylaryl group, a C_8-C_{40}-arylalkenyl group or a halogen atom,

R^3 and R^4 are identical or different and are a hydrogen atom, a halogen atom, a C_1-C_{10}-alkyl group, which is optionally halogenated, a C_6-C_{10}-aryl group, an $-NR_2^{15}$, $-SR^{15}$,

$-OSiR_3^{15}$, SiR_3^{15} or PR_2^{15} radical in which R^{15} is a halogen atom, a C_1-C_{10}-alkyl group or a C_6-C_{10}-aryl group,

R^5 and R^6 are identical or different and are as defined for R^3 and R^4, with the proviso that R^5 and R^6 are not both hydrogen,

R^7 is



$=BR^{11}$, $=AlR^{11}$, -Ge-, -Sn-, -O-, -S-, =SO, $=SO_2$, $=NR^{11}$, =CO, $=PR^{11}$ or $=P(O)R^{11}$,

where

R^{11}, R^{12} and R^{13} are identical or different and are a hydrogen atom, a halogen atom, a C_1-C_{10}-alkyl group, a C_1-C_{10}-fluoroalkyl group, a C_6-C_{10}-aryl group, a C_2-C_{10}-alkenyl group, a C_7-C_{40}-arylalkyl group, a C_8-C_{40}-arylalkenyl group or a C_7-C_{40}-alkylaryl group, or a pair of substituents R^{11} and R^{12} or R^{11} and R^{13}, in each case with the atoms connecting them, form a ring,

M^2 is silicon, germanium or tin,

R^8 and R^9 are identical or different and are as defined for R^{11},

m and n are identical or different and are zero, 1 or 2, m plus n being zero, 1 or 2,

the radicals R^{10} are the same or different and are as defined for R^{11}, R^{12} and R^{13}.]

[17. A compound as claimed in claim 16, wherein:

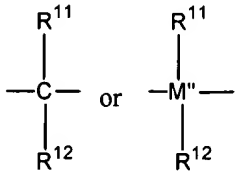
M^1 is titanium, zirconium, hafnium, vanadium, niobium, or tantalum,

R^1 and R^2 are identical or different and are methyl or halogen,

R^3 and R^4 are hydrogen,

R^5 and R^6 are identical or different and are methyl, ethyl, or trifluoromethyl,

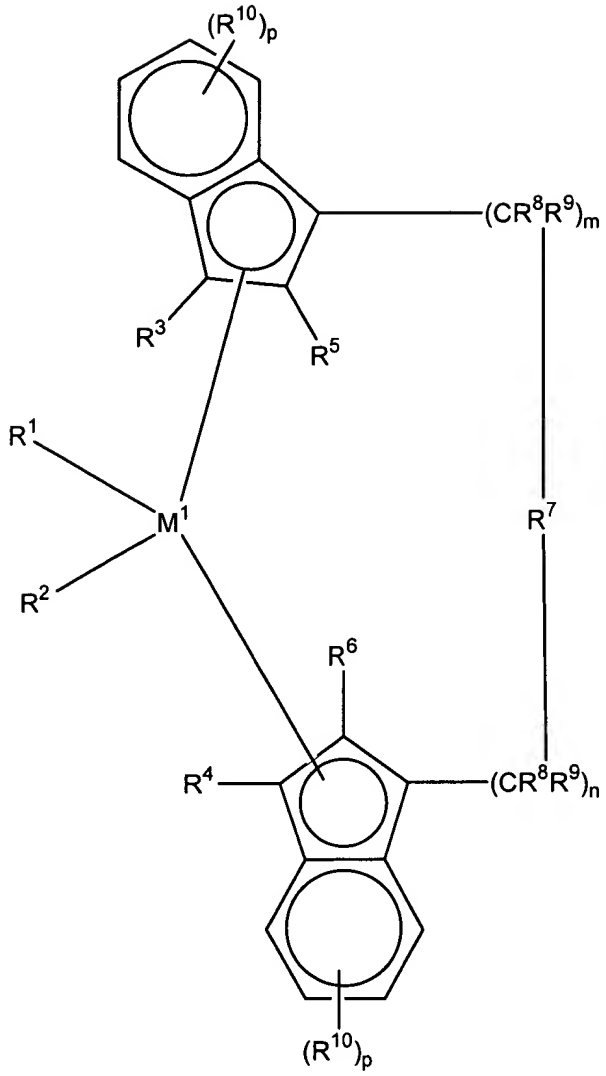
R^7 is a radical of the formula



where M" is silicon or germanium, and

R^8 and R^9 are identical or different and are hydrogen or C_1-C_{10}-alkyl.]

[18. A compound of the formula I



(I)

in which

M^1 is a metal from group IVb, Vb or VIb of the Periodic Table,

R^1 and R^2 are identical or different and are a hydrogen atom,

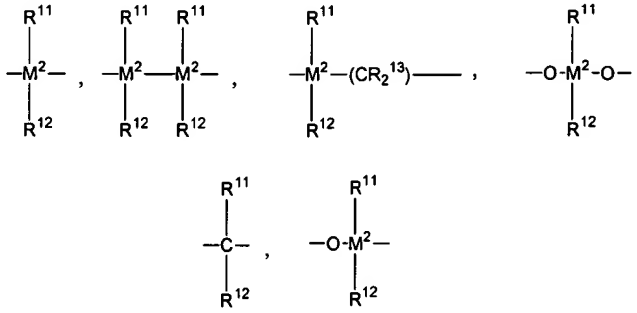
a C_1-C_{10}-alkyl group, a C_1-C_{10}-alkoxy group, a C_6-C_{10}-aryl group, a C_6-C_{10}-aryloxy group, a C_2-C_{10}-alkenyl group, a C_7-C_{40}-arylalkyl group, a C_7-C_{40}-alkylaryl group, a C_8-C_{40}-arylalkenyl group or a halogen atom,

R^3 and R^4 are identical or different and are a hydrogen atom, a halogen atom, a C_1-C_{10}-alkyl group, which is optionally halogenated, a C_6-C_{10}-aryl group, an $-NR_2^{15}$, $-SR^{15}$,

$-OSiR_3^{15}$, SiR_3^{15} or PR_2^{15} radical in which R^{15} is a halogen atom, a C_1-C_{10}-alkyl group or a C_6-C_{10}-aryl group,

R^5 and R^6 are identical or different and are as defined for R^3 and R^4, with the proviso that R^5 and R^6 are not both hydrogen,

R^7 is



$=BR^{11}$, $=AlR^{11}$, -Ge-, -Sn-, -O-, -S-, =SO, $=SO_2$, $=NR^{11}$, =CO, $=PR^{11}$ or $=P(O)R^{11}$,

where

R^{11}, R^{12} and R^{13} are identical or different and are a hydrogen atom, a halogen atom, a C_1-C_{10}-alkyl group, a C_1-C_{10}-fluoroalkyl group, a C_6-C_{10}-aryl group, a C_2-C_{10}-alkenyl group, a C_7-C_{40}-arylalkyl group, a C_8-C_{40}-arylalkenyl group or a C_7-C_{40}-alkylaryl group, or a pair of substituents R^{11} and R^{12} or R^{11} and R^{13}, in each case with the atoms connecting them, form a ring,

M^2 is silicon, germanium or tin,

R^8 and R^9 are identical or different and are as defined for R^{11},

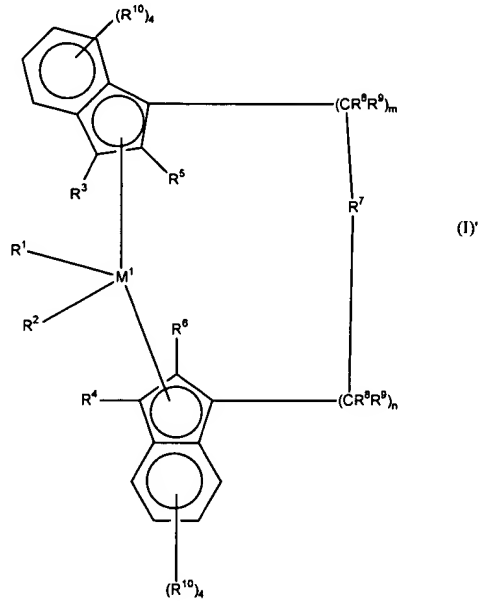
m and n are identical or different and are zero, 1 or 2, m plus n being zero, 1 or 2,

p is a number from 1 to 4, and

the radicals R^{10} are the same or different and are a halogen atom, a C_1-C_{10}-alkyl group, a C_1-C_{10}-fluoroalkyl group, a C_6-C_{10}-aryl group, a C_2-C_{10}-alkenyl group, a C_7-C_{40}-arylalkyl

group, a C_8-C_{40}-arylalkenyl group or a C_7-C_{40}-alkylaryl group, or a pair of substituents R^{10}, with the atoms connecting them, form a ring.]

19. A compound of the formula (I)'



(I)'

in which

M^1 is a metal from group IVb, Vb or VIb of the Periodic Table,

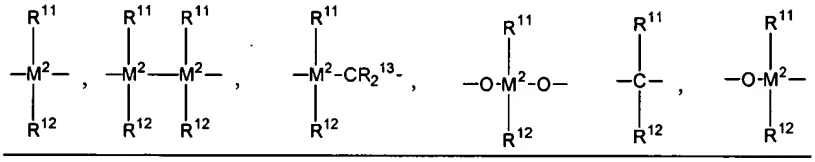
R^1 and R^2 are identical or different and are a hydrogen atom, a C_1-C_{10}-alkyl group, a C_1-C_{10}-alkoxy group, a C_6-C_{10}-aryl group, a C_6-C_{10}-aryloxy group, a C_2-C_{10}-alkenyl group, a C_7-C_{40}-arylalkyl group, a C_7-C_{40}-alkylaryl group, a C_8-C_{40}-arylalkenyl group or a halogen atom,

R^3 is a hydrogen atom, a halogen atom, a C_2-C_{10}-alkyl group, a C_1-C_{10}-alkyl group which is halogenated, a C_6-C_{10}-aryl group, an $-NR_2^{15}$, $-SR^{15}$, $-OSiR_3^{15}$, $-SiR_3^{15}$ or $-PR_2^{15}$ radical in which R^{15} is a halogen atom, a C_1-C_{10}-alkyl group or a C_6-C_{10}-aryl group,

R^4 is a hydrogen atom, a halogen atom, a C_1-C_{10}-alkyl group, which is optionally halogenated, a C_6-C_{10}-aryl group, an $-NR_2^{15}$, $-SR^{15}$, $-OSiR_3^{15}$, $-SiR_3^{15}$ or $-PR_2^{15}$ radical in which R^{15} is a halogen atom, a C_1-C_{10}-alkyl group or a C_6-C_{10}-aryl group,

R^5 and R^6 are identical or different and are as defined for R^3 and R^4, with the proviso that R^5 and R^6 are not hydrogen,

R^7 is



$=BR^{11}$, $=AlR^{11}$, -Ge-, -Sn-, -O-, -S-, =SO, $=SO_2$, $=NR^{11}$, =CO, $=PR^{11}$ or $=P(O)R^{11}$,

where

R^{11}, R^{12} and R^{13} are identical or different and are a hydrogen atom, a halogen atom, a C_1-C_{10}-alkyl group, a C_1-C_{10}-fluoroalkyl group, a C_6-C_{10}-aryl group, a C_2-C_{10}-alkenyl group, a C_7-C_{40}-arylalkyl group, a C_8-C_{40}-arylalkenyl group or a C_7-C_{40}-alkylaryl group, or a pair of substituents R^{11} and R^{12}-- or R^{11} and R^{13}, in each case with the atoms connecting them, form a ring,

M^2 is silicon, germanium or tin,

R^8 and R^9 are identical or different and are as defined for R^{11}

m and n are identical or different and are zero, 1 or 2, m plus n being zero, 1 or 2, the radicals R^{10} are the same or different and are as defined for R^{11}, R^{12} and R^{13}.

20. A compound as claimed in claim 19, wherein:

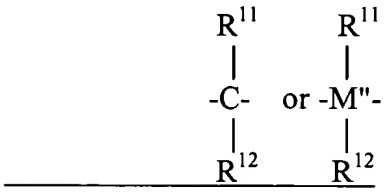
M^1 is titanium, zirconium, hafnium, vanadium, niobium, or tantalum,

R^1 and R^2 are identical or different and are methyl or halogen,

R^3 and R^4 are hydrogen,

R^5 and R^6 are identical or different and are methyl, ethyl, or trifluoromethyl,

R^7 is a radical of the formula



where M" is silicon or germanium, and

R^8 and R^9 are identical or different and are hydrogen or C_1-C_{10}-alkyl.

21. A catalyst composition comprising the combination comprising a compound of claim 19 and a cocatalyst.

22. A catalyst composition comprising the combination comprising a compound of claim 19 and an aluminoxane.

23. A process for polymerizing an olefin monomer, comprising the step of carrying out the polymerization in the presence of a catalyst composition of claim 21.

24. A process for polymerizing an olefin monomer, comprising the step of carrying out the polymerization in the presence of a catalyst composition of claim 22.

25. The compound as claimed in claim 1, wherein R^3 is a hydrogen atom, a halogen atom, a C_1-C_{10}-alkyl group which is halogenated, a C_6-C_{10}-aryl group, an $-NR_2^{15}$, $-SR^{15}$, $-OSiR_3^{15}$, $-SiR_3^{15}$ or $-PR_2^{15}$ radical in which R^{15} is a halogen atom, a C_1-C_{10}-alkyl group or a C_6-C_{10}-aryl group.

26. The compound as claimed in claim 1, wherein R^3 is a hydrogen atom, a halogen atom, a C_6-C_{10}-aryl group, an $-NR_2^{15}$, $-SR^{15}$, $-OSiR_3^{15}$, $-SiR_3^{15}$ or $-PR_2^{15}$ radical in which R^{15} is a halogen atom, a C_1-C_{10}-alkyl group or a C_6-C_{10}-aryl group.